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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/345,669	06/30/1999	RONALD K. MINEMIER	INTL-0227-US	1490

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TIMOTHY N TROP
TROP PRUNER HU & MILES
8554 KATY FREEWAY STE 100
HOUSTON, TX 77024

EXAMINER	
TRAN, NHAN T	

ART UNIT	PAPER NUMBER
2615	9

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/345,669	Applicant(s) MINEMIER, RONALD K.	
	Examiner Nhan T. Tran	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *6/30/1999* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. In view of the Appeal Brief filed on 3/25/2004, PROSECUTION IS HEREBY REOPENED. A new ground of rejections is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-13 & 15-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Fossum et al (US 6,611,288).

Regarding claim 1, Fossum discloses a method of detecting defective sensing element array (see abstract) comprising:

reading out a frame of sensing element data from an array, and determining the number of defective elements (bad or dead pixels) by analyzing (compared with specified performance windows) the data during the frame read out (see col. 2, lines 15-30, lines 55-65, and col. 3, lines 1-32). It should be noted that **the number of defective elements** is determined by virtue of defective groups that cannot exceed the upper limit of defective pixel values P_B which represents the maximum number of defective pixels to be allowed containing **a single** defective pixel, a group of defective pixels such as a **5x5 area (=25 pixels)** and/or **the whole row (i.e., 1024 pixels), the whole column (i.e., 1024 pixels)** of the sensor array.

Regarding claim 2, Fossum discloses that all pixels which do not fall within the specified performance windows (i.e., high and low limits under dark and illumination conditions) are identified as defective pixels as described in col. 2, lines 56-65. Furthermore, Fossum also anticipates operations of such an imaging system to be implemented by either hardware configuration using Hardware Description Language (HDL) or Field Programmable Gate Array (FPGA) or other software programs (see col. 4, lines 24-27).

Regarding claim 3, Fossum clearly discloses that the illumination needs to be uniform and low enough that will not saturate the array, which indicates that the specified performance windows are based on such the illumination conditions (col. 2, lines 59-65).

Regarding claims 4 & 5, see the analysis of claims 2 and 3 for the specified performance windows used to detect all defective pixels.

Regarding claim 6, it is clearly shown in Figs. 2 & 3, col. 2, lines 8-11 and lines 45-47 that all defective pixels are identified and stored in the register 204 (details shown by Fig. 3) within the same substrate (die).

Regarding claims 7 & 8, also disclosed is the detection of a defective column, a defective row and a neighborhood of pixels surrounding a central pixel that can all be identified as bad as "5 pixels around x, y" (i.e., offset by 5 pixels in both x and y addresses with respect to a central pixel to detect the number of spatial defects up to 25 defective pixels). Further, other shapes of bad pixel areas could also defined to allow tailoring the shapes of bad pixel areas to approximate the geometrical arrangement of manufacturing defects, wherein the control logic would then use counters or the like to compare the neighborhoods. See col. 3, lines 1-23 and col. 4, lines 16-20.

Regarding claims 9 & 10, Fossum teaches that the stored indicia is in form of (R, C, T) where R is the row number, C is the column number and T is the indication of the area type (col. 3, lines 11-23). It is clear that the row and column addresses are added to the indicia and stored

in the register to expand the area of a defective group. Also counters or the like are anticipated to be used to compare the neighborhoods (col. 4, lines 16-20).

Regarding claim 11, the number of spatial defects by column and row are identified (col. 3, lines 1-23).

Regarding claim 12, the information about the location of defective pixels (indicia in form of (R, C, T)) is stored in register 300 (see col. 2, lines 63-65 and col. 3, lines 1-45).

Regarding claim 13, Fossum discloses that a single defective pixel and a defective group of pixels have corresponding locations in the memory set with the indicia in form of (R, C, T) having T as a three bit code for identifying the area types (col. 3, lines 6-16).

Regarding claim 15, see the analysis of claims 1, 2 and 4. Note col. 2, lines 28-30 and col. 4, lines 24-27 which indicates a processor-based system comprising an inherent memory for storing instructions (i.e., Hardware Description Language (HDL) or Field Programmable Gate Array (FPGA) or other software programs) in order for the system to operate as disclosed.

Regarding claims 16 & 17, see the analysis of claims 3 & 4.

Regarding claims 18 & 19, see the analysis of claims 7 & 8.

Regarding claims 20 & 21, see the analysis of claims 11 & 12.

Regarding claim 22, Fossum discloses a sensing device comprising a plurality of sensing elements (pixels) capable of indicating information to be captured; and a circuit (high level circuit shown in Figs. 2 & 3) in the device adapted to determine the number of defective elements by analyzing the element data as it reads out from the elements (see col. 2, lines 15-30, 55-65, and col. 3, lines 24-32 and note the Examiner's analysis in claim 1).

Regarding claim 23, see the analysis of claim 2. In order to set the specified performance windows using either Hardware Description Language or other software configurations, a memory must exist in Fossum's system for storing instructions to enable the performance windows (i.e., high and low limits for pixel intensity values).

Regarding claim 24, see the analysis of claim 7.

Regarding claim 25, see the analysis of claim 9, wherein "a window circuit" is represented by the control unit 200 and register 300 as shown in Figs. 2 & 3.

Regarding claim 26, Fossum discloses a comparator (320) adapted to compare the address of a defective element to the stored address plus the programmable offset (col. 3, line 55 – col. 4, line 7).

Regarding claims 27 & 28, see the analysis of claims 12 & 13.

Regarding claims 29 & 30, see the analysis of claim 6 and Figs. 2 & 3.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (703) 605-4246. The examiner can normally be reached on Monday - Thursday, 8:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NT.

ANDREW CHRISTENSEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600